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**Research By-Product**  
**A GUIDE FOR DEVELOPING**  
**QUESTIONNAIRE ITEMS**

**T. O. Jacobs**

**January 1970**

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## Technical Advisory Service

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HumRRO Division No. 4  
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## HUMAN RESOURCES RESEARCH ORGANIZATION



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## **FOREWORD**

The purpose of this document is to present in brief and readable form a guide for the development of test questions for questionnaire instruments other than achievement testing. The guide was originally developed as a part of Technical Advisory Service provided to the U.S. Army Infantry Board, Fort Benning, Georgia. It is published here as a Research By-Product because of its potential utility to other organizations and agencies in developing questionnaire items.

The guide was developed at HumRRO Division No. 4, Fort Benning, Georgia. Dr. T. O. Jacobs is Director of the Division. Military liaison and support were supplied by the U.S. Army Infantry Human Research Unit of which LTC Chester I. Christie is the Chief.

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## PREFACE

The purpose of this document is to present in brief and readable form a guide for the development of test questions for questionnaire instruments other than achievement testing. It is based to a very <sup>1</sup> great extent on an excellent and readable book by Stanley L. Payne.<sup>1</sup>

The book by Payne is a great deal more comprehensive than the present document. While the content here has been restricted to attitude and information type questions, even these topics are not considered in the technical detail that would be appropriate for a test construction specialist. Further, no attempt has been made to provide information about sample selection, sample size requirements, counterbalancing considerations for alternate questionnaire forms, or for control of possible administration/testing variables.

If the reader can obtain access to the book on which the present document was based, he will find it readable, and thorough. It is recommended. However, in its absence, the present guide may help to avoid at least a few of the more serious possible errors that can produce faulty questions, and the inevitable consequence, faulty information.

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<sup>1</sup>Payne, Stanley L. The Art of Asking Questions. Princeton: Princeton University Press, 1951.

## A GUIDE FOR DEVELOPING QUESTIONNAIRE ITEMS

### INTRODUCTION

The purpose of this document is to talk about how to ask questions. This is not as easy as it sounds. The object is to ask the right question, and to ask it in such a way that you will find out what you need to know.

There are a great many pitfalls in asking questions. Not all of them will be considered here. Further, the kinds of questions with which we will be concerned will ask mainly for information that someone else has, or for how he feels about something. These are answers that a test soldier might have after participating in an equipment troop test, for example, or information he might have about a combat operation. There are rules for how best to ask this kind of question. Many of these rules will also apply to the kind of test that occurs after a course of instruction, i.e., an achievement test, but no attempt will be made to cover all the problems and techniques that are important in developing that kind of test.

Payne<sup>1</sup> reported the results of asking a sample of researchers what they saw as the principal problems with research methods, with the following results:

Improperly worded questionnaires	74%
Faulty Interpretation	58%
Inadequacy of samples	52%
Improper statistical methods	44%
Presentation of results without supporting data	41%

So, this monograph will concentrate on what seems to be the largest part of the problem, writing good questions. This is not the total solution to all the criticisms mentioned above, but, as three experts in every four would indicate, it is a good start in the right direction.

Four chapters will follow this introduction. In the first, there will be certain kinds of questions you should ask yourself. This is to make sure that you know what you are asking about. In the second chapter, there will be a discussion of types of questions, together with their relative advantages and disadvantages. Some types of questions can do certain kinds of things well, but do other things fairly poorly.

The third chapter will discuss actual steps in building a questionnaire, including some reasonably well tested do's and don'ts. The fourth and final chapter will contain a check list that will help avoid many of the problems involved in writing good questions.

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<sup>1</sup>Payne, Stanley L. The Art of Asking Questions. Princeton: Princeton University Press, 1951.



## CHAPTER 1

### Ask Yourself

The words, "systems approach," are almost like a sacred cow these days. If anything is done using a "systems approach," it can't be all bad. Seriously, there is some merit to taking a systems approach to asking questions. Asking yourself the following five questions will lay the foundation for a far more valuable questionnaire than you could otherwise have produced.

#### Who Needs the Information?

The reason for asking this question is so straightforward that it may seem trivial. However, it is something which can be overlooked, and on which a lot depends. Organizations, including the Army, have a machinery for transmitting communications within its own structure. The term usually applied is Chain of Command. The requirement for the information you are going to collect may have come from two or three levels above your own, and something may have been lost in the communication process.

At any rate, there are certain things you need to know, and knowledge of who needs the information will provide you a source in the event you find you cannot answer the following four questions. This leads to the next question.

#### What Decision will be Made Based on your Information?

The answer to this one will tell you in part why the information is needed, and will lay the foundation for the answers to the next question. This is where the systems approach really starts to make a difference. Depending on what decision is going to be made, some kinds of information will make a difference, and other kinds will not.

Suppose, for example, you are preparing to collect information as a part of a test comparing a new item of equipment with an old standard item. The nature of the decision to be made is clear enough. It will be either selection of the new equipment, or retention of the old with which it is being compared. The basis for the decision will usually also be clear, from the small development requirement (SDR) or qualitative materiel requirement (QMR) which led to the development of the item being tested. Analysis of the QMR will identify the qualitative requirements the new equipment must have, and will give you the start you need to develop your questions.

An explicit statement of the pending decision will not usually lead as easily to a good statement of your information needs in other areas. However, the statement of information needs is no less important. Knowledge of the decision that is being considered is an essential key in both cases to the next step.

### What Facts will Affect the Decision?

As you can see, the art of asking good questions may be closely related to the designing of good tests. In order to test new equipment well, it is necessary to expose that equipment to the kind of environment and use for which it has been designed. This includes use--and sometimes abuse--by the type of individual who will use it operationally.

However, sometimes the information is needed for something other than an equipment test. When this is so, the task of finding out what facts will have a significant bearing on the problem is not always a straightforward task, and sometimes will be downright difficult. Sometimes a decision maker will know the decision being considered, but may even be unsure himself of the full range of information that will be needed to make a good decision. In this case, learning what kind of facts will help is part of the problem. If this happens, you will find that consultation with colleagues will be a real help, asking, in essence, "What kinds of things would you want to know if you had this decision to make?" It will help to make a list of elements of information that you feel will be needed as you go. If you have time, you may even want to have this list reviewed before you start developing questions.

Clearly, the real question is, "What information will make a significant difference to the decision maker?" If you collect unnecessary information, your time will have been put to no good use, at the very least. Beyond this, a considerably more serious possibility is that the decision may get made on the basis of irrelevant information. This leads us to our third question.

### Whom Are You Asking?

To get good information, not only must a good question be asked, but also it must be asked of someone who has the answer. This ties in with the design of tests, which expose proper test subjects to the proper conditions so that they will then be able to tell you the kind of information you want to know. In fact, one basic objective of a good equipment test is to qualify test troops to be able to answer the questions that need to be asked. It is also important to be sure that the right kind of test subject is used.

However, sometimes it is necessary to get information without the benefit of a carefully designed test. When this is so, it is especially important to be sure you are asking the right person for the information, in terms of whether he is qualified to answer and whether he has the information you need, if qualified. This may even require, in some cases, that you actually seek out an expert to be certain of getting good answers.

It does not require much knowledge of asking questions to know that a question about combat operations should not be asked of a support troop at a high-level depot. However, sometimes the problem is more subtle. Consider the following question:

Example I

Was the TOE of your unit suitable  
for the missions assigned?

Yes     \_\_\_\_\_

No      \_\_\_\_\_

This question was asked of noncommissioned officers in Vietnam. While it appeared to be a perfectly reasonable question to the officer who wrote it, he had not stopped to think that NCO's generally have not been trained to think in terms of how TOE's are designed to produce mission effectiveness. It is quite possible that many noncommissioned officers answered this question on the basis of whether they thought the missions assigned to them were reasonable missions, which is quite a different emphasis than that requested in the question.

An equally important consideration is the frame of reference the test subject will be using in answering the question. Frame of reference was the consideration in the example just given, in which the NCOs' frame of reference is simply different from that of the officer who worded the question. Frame of reference is a topic that will be discussed in greater length later.

Another topic that will be considered, too, is whether the test subject can understand what you want in a question. The Army has an expression that is time worn, but unbowed: KISS. This stands for "Keep it simple, stupid!" We will talk more about this later, too.

What Are the Consequences of a Wrong Answer?

While this basically is an administrative question, it has an important bearing on questionnaire and test design. Clearly, if it makes little difference which of two alternatives are chosen, it makes little difference if the information is collected. On the other hand, if there is chance that millions of dollars will be saved through the use of a more effective block of training, or that a new piece of equipment might be purchased costing millions of dollars, but which is not better than the old, it is necessary to design tests very well, and ask the right questions with great care. Also, in general, the more important the test, the greater will be the number of test subjects needed in order to provide information of sufficiently high reliability.

However, these are questions that pertain more to test design, and the statistical analysis of the data collected. The important point for the present discussion is, again, that when you ask questions, you must have a feel for how important it is that the answers are right.

## CHAPTER 2

### Question Types

While there are many different kinds of questions, only three will be considered here, because it will almost always be possible for you to get the information you need with one or more of them. The three types are open end, two-way, and multiple choice. In deciding which type you want to use, you will need to consider the following factors:

1. How much you know about the range of possible answers.
2. How much time your respondents have, or are willing to give you.
3. The number of subjects required to get satisfactory reliability, and the resulting data analysis requirements.

#### Open-Ended Questions

An example of an open-ended question is shown below.

#### Example II

What do you think of the AR-15?

One advantage of the open-ended question is immediately apparent. It is very easy to ask. This is useful when the question writer either does not know, or is not certain about the entire range of possible alternative answers. By using this type of question, and by asking enough respondents, it is usually possible to discover almost all possibilities.

However, open-ended questions have some disadvantages, too. One is that it usually will take a good deal more time for you to get answers, if you expect the answers to be written. Further, depending on the motivation of your respondent, he may not give a full answer, or any answer at all, when he sees how much work it is going to be for him. A second disadvantage of the open-ended question is the requirement for analysis time. For a question asker on a crash project, the only thing that could be worse than failing to get enough information would be getting so much that he is buried by it. Open-ended questions, answered by motivated respondents, are good at burying data analysts. They usually cannot be handled by machine analysis methods, e.g., computer data processing methods, without lengthy preliminary steps. If your test requires a fairly large number of subjects, or a fairly large number of questions, the data analysis problem thus can grow into a major project unless some other form of question is used. Still a third disadvantage is that analysis of the responses to an open-ended question usually must be done by someone who has substantial

knowledge about the question's content, as opposed to a statistical clerk. This may result in imposing another work load on someone who is already hard pressed for time.

Finally, a fourth disadvantage is that open-ended questions may be easier to misinterpret, because the respondent does not have a set of choices available which might in themselves guide him toward the proper frame of reference. For example, the following question is given by Payne:

Example III

Why do you buy the 50-cent motor oil  
instead of the 70-cent oil?

A fairly obvious reason why 50-cent oil is bought instead of 70-cent oil is that it is cheaper. However, many respondents may feel this is so obvious that the person asking the question wants a different kind of answer. Thus, the question may fail to produce valid responses.

In summary, the open-ended question is easy to ask, but it has several disadvantages, among which is that it produces data that are time consuming to analyze. Sometimes, a good procedure is to use an open-ended question with a small number of respondents in order to find out what the range of alternatives is. Armed with this knowledge, it may then be possible to construct good multiple-choice questions that will be faster to administer and easier to analyze.

Two-Way Questions

The two-way question is just what it says, a question which permits the choice of two alternatives. Example IV is a two-way question.

Example IV

Which do you prefer, the ABC helmet  
or the X/Z helmet? (Check one)

ABC helmet \_\_\_\_\_

XYZ helmet \_\_\_\_\_

An advantage is immediately apparent. Now, your respondent can merely check one and proceed to the next question. It is a relatively easy type of question to develop, and permits rapid analysis.

However, it also has disadvantages. First, two alternatives might not be enough for some types of questions. Second, there may be a tendency for your respondents to choose an answer based on what is known as a response set. That is, some people tend to choose the first answer they see, while others may choose the last answer they see. A way of avoiding this problem with the two-way question is to print half the questionnaires with the question in the form shown in Example IV, and the other half with the order of mention of the two helmets reversed. Sometimes this will make a difference and sometimes not, depending to a substantial extent on the number of words in the alternatives. However, it is a good precaution even with short alternatives like those in Example IV.

Another common fault of the two-way question is the presentation of alternatives that overlap. Example V has overlapping alternatives.

Example V	
Is the ABC helmet a good helmet, or could it be improved?	
Good helmet	_____
Could be improved	_____

While this question has more than one problem, it is apparent that it is quite possible that the ABC helmet is both a good helmet, and could be improved. In addition, almost anything can be improved. Thus, the second choice ought to be extremely popular if your respondents think carefully about it, without regard to the merits of the helmet as such.

In summary, for some purposes the two-way question may be an improvement over the open-ended question, in that it provides for faster and more economical analysis of data, which means that data can be gotten from more respondents. However, it does require a bit more care in its development. Further, it is also subject to some of the faults of multiple-choice questions, as well as some peculiar ones of its own.

#### Multiple-Choice Questions

This type of question has the advantage of being easily scored, which means that data analysis is a relatively inexpensive process requiring no special content expertise. It also requires considerably less time per respondent answer than the open-ended question. Further, it does not require them to work so hard to give you the information you need, which means they are more likely to try to do what you want.

Perhaps an even more significant advantage is that it puts all persons on the same footing when answering. That is, each person will be able to consider the same range of alternatives when choosing his answer. On the other hand, this may be a major disadvantage for the question maker, because it requires him to know all the significant possible alternatives at the time he formulates the question.

One of the big problems with multiple-choice questions is being certain that the answer you receive to your question is a real answer. This statement may sound ridiculous, but the fact of the matter is that a very deliberate and well-thought-out response on a paper and pencil multiple-choice test looks very similar to one that has received no thought at all. That is, both are check marks, circles, blackened out spaces, etc. However, there are a few ways that you can use to make it more likely that the answers you get are well-thought-out.

As was noted in discussing the two-way question, people have a tendency when choosing answers to be influenced by "response set." With multiple-choice questions, for example, they tend to choose answers from the middle of the list, if the list consists of numbers, and from either the top of the list or the bottom if the alternatives are fairly lengthy expressions of ideas. A way to combat this is, for numbers, to use different forms of the questions with the alternatives in a different order, for different parts of your sample. For alternatives presenting ideas, i.e., not numbers, this same approach can be used, in addition to keeping the number of words in each alternative as small as possible.

Another kind of error is the inclusion of an alternative that is obviously very desirable. Example VI contains an example of a socially undesirable response.

Example VI

What percentage of the time were the enemy targets:

- a. Exactly located and fired at \_\_\_\_\_%
- b. Closely located and fired at \_\_\_\_\_%
- c. Location unknown but fired at  
hoping to suppress the enemy \_\_\_\_\_%

Alternative c, if the respondent thinks carefully about it, might be thought to imply a lower degree of skill in locating the enemy than might be desirable. In thinking about the item, he might see that he could check b instead, and still live with his conscience. Admittedly, he did not see the enemy but he can be fairly well convinced that the enemy was "closely located," i.e., he was not firing purely random shots as alternative c might imply. Thus, the pure social desirability of the

alternatives ought to result in higher percentages reported for b, and lower percentages for c.

Example VII shows another form of this same problem.

Example VII

What do you consider the most important characteristic of a good helmet?

- a. Comfort
- b. Stability
- c. Utility for washbasin
- d. Protection
- e. Weight

If the rifleman is asked this question, he almost certainly will choose protection as its most important characteristic. However, if the test helmet is being procured under a requirement that its protection be the equivalent of the standard helmet, the fact that protection is desired by the rifleman is irrelevant, because the test helmet will fail anyway if its protection capabilities are not adequate. This gets back to the requirement for a systems approach to the asking of questions, and to the "so what?" you must ask about your own questions. In this particular case, the question would have had a nothing "so what." Either this question should not be asked, or it should be asked in a way that will give information about what the soldier considers of next importance after protection. This can be done by either leaving out "protection," or by asking respondents to rank the alternatives.

In summary, multiple-choice tests are easy to administer, and fast to score. They are especially useful for dealing with a large number of test subjects. However, the questions and their alternatives must be worded with very great care. Otherwise, the information obtained from them may not be valid. A particular requirement for multiple-choice items is that the question writer must know the full range of significant alternatives. He can help himself in that respect by asking a few subjects to respond to open-ended questions in advance, however, and can give himself some insurance by providing an open-ended alternative which can be handled in the data analysis through special processing, as is shown in Example VIII.



**Example VIII**

**What types of missions have you been on?**

- a. Airmobile assaults** \_\_\_\_\_
- b. Mechanized operations** \_\_\_\_\_
- c. Cordon and search** \_\_\_\_\_
- d. Base security** \_\_\_\_\_
- e. Other** \_\_\_\_\_

(Specify what)

## CHAPTER 3

### Framing the Questions

The general considerations given in the preceding two chapters should help in giving you an initial idea about the extent of the questions you want to ask and the way you want to ask them. The question of what information is needed should have been answered by the systems examination of the requirement. This should have provided a comprehensive list of all the points on which information is required for the decision that is going to be made. The brief consideration of question types should have given you an idea of how you want to ask your questions.

From this point on, the development of the questionnaire consists of initial framing and review of questions, and pretesting.

#### The Initial Development of the Question

Let us assume now that you have selected a particular issue or element of information about which you now are going to frame a question. Here are some cautions that can help you in writing questions:

1. Don't assume your respondent will know what you are talking about, just because you do. Example IX, taken from Payne, illustrates this point.

#### Example IX

Which do you prefer, dichotomous  
or open questions?

The odds are that a fairly substantial number of people would not be able to define these two question types for you. However, if you ask them the question in Example IX, they will be happy to choose. One point is that people will not volunteer their ignorance of something, though they may admit it if you ask them. However, this caution goes beyond ignorance of an issue. Another problem is that the specialist wording the question may simply have an unusual command of his own language. Scientific jargon has been criticized. Perhaps overlooked is the fact that there are other kinds of jargon, too. The question asker has a responsibility to make himself understood. (One way of screening for individuals who do not have a basis for providing the information you need is to include one or two pure information questions, planning to discard questionnaire returns from respondents who cannot answer the information questions correctly.)

2. Don't leave yourself wondering: What did he mean by that?  
Sometimes, a question can be worded so that it is impossible to know what was meant by a given answer. Example X illustrates this.

Example X	
Should this cap be adopted, or its alternate?	
Yes	_____
No	_____

If he answers, "Yes," what would you say he meant? Of course, you would rarely find a question with such obviously ambiguous response alternatives, but it does illustrate the problem.

3. Don't ask people to go against their basic inclinations.  
This is a very vague statement. An example of this, however, is that people generally are reluctant to criticize, though they enjoy giving praise. (There are some exceptions to this rule, but it is generally true.) Thus, a question that allows a respondent to avoid criticism will bias his answers; similarly, a question that leads him to criticize will bias responses because he will not wish to do so. Example XI illustrates this.

Example XI	
Was your unit's use of the following correct, and in accordance with current Army doctrine?	
a. Fire and maneuver	
Yes	_____
No	_____
If no, why not? _____	
_____	
_____	

This question asks the respondent either to criticize his unit or to avoid criticism. Some hardy souls might answer No, if they have an important point to make, feeling that the explanation can put them back on good footing. However, a substantial number of others will wash their hands of the whole affair and answer Yes.

4. Don't "lead." You have probably heard, several times, the expression, "People are no d--- good!" The problem with this is that it simply is not true. People generally are reasonably cooperative and like to help. If they can figure out what you want, they will try to give it to you. Example XII contains two illustrations of leading, both of which were actually used in the collection of data.

Example XII

Do you think your men were pretty highly motivated on this operation?

Yes \_\_\_\_\_

No \_\_\_\_\_

Were they pretty good at using good noise discipline during movement?

Yes \_\_\_\_\_

No \_\_\_\_\_

As one might predict, the impression one received from analysis of the answers is that men are in general, highly motivated, and use good noise discipline during movement. (These questions also suffer from allowing respondents to avoid criticizing the problem just discussed, and of allowing them to make socially desirable answers as well. This is a problem that will be discussed later.)

5. Don't confuse or lose the respondent. The language you use in framing your question will have a lot to do not only with the quality of the information your respondent gives you, but also how he feels about giving it. One of the easiest ways to create a problem is to use a confusing question such as that given in Example XIII (taken from Payne):

Example XIII

Are you against not having prohibition on non-week days, including Sunday and holidays?

Yes \_\_\_\_\_

No \_\_\_\_\_

This particularly interesting illustration might mean anything. However, it is not necessary to use double negatives to confuse someone. It can be done more simply, merely by using words he cannot understand, as shown in Example XIV:

<b>Example XIV</b>
What countermeasures were taken by your unit to preclude being ambushed?
a. On motor movements _____ _____ _____
b. On foot movements _____ _____ _____

Of course, this question has additional problems other than the fact that "countermeasures" and "preclude" are words that might not be understood by the average soldier. An additional problem is that a respondent who knows the meaning of all the words may not be sure whether he should give countermeasures that preclude ambush, or measures to counterambushes. There is a difference, and his unit might have stressed the second.

Example XV shows how a respondent can be asked for information he may not be able to give.

<b>Example XV</b>
What special tactics did your unit employ in conducting the following types of operations? (Only indicate actions which to your knowledge are not now covered in FM's or other published guidance.)
a. Offensive operations (day, night, mechanized, river, canal line, raids, ambushes, patrols, etc.)

The particular source of trouble, so far as this point is concerned, comes from the section in parentheses. While the intention of the

question author is fairly straightforward, he has virtually eliminated most respondents, because most, unlike the author of the question, are probably not all that familiar with "FM's or other published guidance."

Of course, two other problems should be mentioned about this particular item. First, the word "actions" is ambiguous. It has two meanings, and it is difficult to know which one is correct in relation to the sentence preceding it. Second, this is an open-ended question with a vengeance. Given a motivated respondent in a highly inventive unit, it is possible that an answer to this single question could take hours. It clearly is a question that maximizes the convenience of the writer, at the expense of the respondent.

Finally, Example XVI shows that several different methods of confusing the respondent can be combined in the same question.

#### Example XVI

When engaging enemy targets, seen or suspected, at ranges from 0 to 50 meters and under extreme time pressure, what type fire would you use?

- 203 a. Semiautomatic \_\_\_\_; automatic \_\_\_\_
- 205 b. Carefully aimed \_\_\_\_; quickly aimed using the sights \_\_\_\_; pointing type not using sights fired from the shoulder \_\_\_\_; pointing type underarm \_\_\_\_.
- 200 c. Single rounds \_\_\_\_; 2-3 round burst \_\_\_\_; 3-5 round bursts \_\_\_\_; 5-10 round bursts \_\_\_\_; 20 round burst hose effect \_\_\_\_.
- 178 d. Fire at single targets \_\_\_\_; fire at groups of personnel \_\_\_\_; fire at the area \_\_\_\_.
- 186 e. Shoot first then take cover \_\_\_\_; take cover then shoot \_\_\_\_; wait for orders \_\_\_\_.

The first problem is in the wording of the initial question. It is doubtful that the average infantry soldier, when reading this, would really have grasped all the conditions stated. This confusion might be reduced by rewording, perhaps in this way:

What type of fire would you use when engaging  
very close targets under great time pressure?

The plan here is to make the question more understandable, and also to break the very complex initial question into parts that can be handled more easily.

A second fault with Example XVI is that it is not really clear that he is to respond to each line. In this example, numbers are

given at the left of each line, showing how many answers, in all, were given to all the possible choices on that line when this question was actually used. It is clear that while almost everyone grasped the idea that he should answer more than one time, not everyone answered the same number of times. However, it is not certain whether some answered too many or some too few. Difficulties like this can be avoided by giving the respondent explicit directions, and by making his job more simple than this question did.

6. Don't make your questions too long. This, and the preceding point, are similar kinds of things. The more words a question has, and the bigger they are, the more confusing it is likely to be.

Example XVII illustrates this problem.

Example XVII

In the highly specialized counterinsurgency environment represented by the basically internecine affair in Vietnam, what would you say should represent the basic essence of our rationale for continuation of our involvement?

- a. Prolongation of attrition of enemy forces, in order to reduce the level of threat to South Vietnam.
- b. Orderly transfer of military responsibility to the host country, in order to produce stabilized competency to deal with any future internal disturbances.

Several things are wrong with this question. However, it is unlikely that the average respondent would be bothered by them. The massive words alone very probably would convince him to stop reading at an early point. He might then choose an alternative by flipping an unbiased coin; an even more attractive choice might be just to go to the next item. Worst of all, he probably will choose one alternative, but not in an unbiased manner, so that your item not only will fail to obtain valid information from him, but will obtain invalid information.

The four "word" rules below, adopted from Payne, are very good to follow:

1. Does it mean what you intended?
2. Does it have any other meanings?
3. If so, does the context make the intended meaning clear?

4. Is a simpler word or phrase suggested in the dictionary?

Perhaps a fifth might be:

5. Can you get along without it?

The point of this caution is that it is very easy to get incorrect information on a multiple-choice test by giving your respondent a choice he cannot understand. Most people will cooperate. They will choose anyway.

When actually writing questions, each should be carefully screened for words that might be unfamiliar to the respondents you intend to use. Pretesting, which will be discussed later, can also provide an opportunity to look for difficult words. A good technique for pretesting is to have the respondent read the question aloud to you and then tell you what it means. Any difficulties at all in the pretest should cause danger signals to fly.

7. Don't use "All American" or giveaway words. This caution is related to the one just discussed. Example XVIII shows the use of two dead giveaway words which would lead the careful thinker to respond in the negative, and others, thinking less carefully to respond in the positive.

Example XVIII

Do you feel that your unit did its best  
in all contacts over the past six months?

Yes \_\_\_\_\_

No \_\_\_\_\_

One wonders if any unit can do its actual best, except very rarely. The word all makes this an even more difficult question to answer positively. You probably have heard the expression: All statements containing "all" are false, including this one.

The result of a question like that shown in Example XVIII is that it may separate one kind of thinker from another, without regard to the kind of information you are trying to get.

8. Don't load your questions. Loading questions is a good deal like loading dice. Either way, you can be pretty sure in advance what kind of result you are going to get. There are many different ways of loading questions. Of those given by Payne, the following appear to be the most likely pitfalls for present purposes.



a. The use of stereotypes. If motherhood and sin were on a ballot, most people would vote for motherhood and against sin. Example XIX shows a motherhood type of question.

<p style="text-align: center;">Example XIX</p> <p style="text-align: center;">Did you clean your weapon regularly in Vietnam?</p> <p style="text-align: center;">Yes _____</p> <p style="text-align: center;">No _____</p>
--

It is hard to imagine anyone answering "No" to this question. As you can see, this is very much like leading, also.

b. Recourse to the status quo. People have a substantial tendency to keep things the way they are, unless something is really wrong. Example XX shows a question that should have been worded a different way to avoid this problem.

<p style="text-align: center;">Example XX</p> <p style="text-align: center;">Do you feel that the end-of-course test is satisfactory as it is, or should it be changed?</p> <p style="text-align: center;">a. Satisfactory as is _____</p> <p style="text-align: center;">b. Should be changed _____</p>
--

Answers to this question should be suspected merely on the basis of the tendency people have to keep things the way they are.

c. Unbalanced alternatives. Example XXI shows loading of a different type. In the first part of this Example, analysis of the available alternatives leaves the impression that the writer of the question thinks at least some should not have a full automatic selector. Analysis of the alternatives in the second part of the Example leads to the certain conclusion that the writer of the question believes there should be at least one grenade launcher in the rifle squad.

**Example XXI**

Should every rifleman in the rifle squad have a full automatic selector on his rifle?

Yes \_\_\_\_\_

No \_\_\_\_\_

If no, how many should? \_\_\_\_\_

How many grenade launchers (M79) do you desire in the rifle squad?

- a. 1
- b. 2
- c. 3
- d. 4 or more

This leads to the observation that any bias on the part of the question writer himself just might be one source of loading. It turns out that this is often very true, and most of the time is not recognized by him at all. So a good check here is to ask yourself what you think, what someone who disagrees with you would think, and whether your alternatives would give him a good chance to present his views.

**Pretesting the Questionnaire**

Even the most careful screening will not find every problem with all questions. Pretesting thus is very important, to find those overlooked problems that would otherwise reduce the validity of the information you will get. However, just any pretest will not do. You must know how to pretest the items, and what to look for.

Perhaps of first importance, the pretest respondents should be representative of your eventual target audience. That is, if a test is going to be run using TOE Infantry soldiers, you would not want to pretest your questionnaire with a sample drawn from the Infantry Officer Advanced Course. If your eventual test sample will consist of Infantry AIT graduates, you probably would not want to pretest with School Support Troops, many of whom, at the time of the present writing, have had combat experience.

A second point is that the pretest is more useful if it is conducted by someone who knows the subject area. If the question writer himself, for example, conducts the pretest, using pretest respondents one at a

time, he can often obtain useful information by asking for the question to be read and then explained. Misunderstandings become very apparent through this process.

Another useful technique is to ask the respondent to explain what he means by a choice, or to give his reason for the choice, even though these questions will be not asked in the main administration of the questionnaire. These questions will frequently reveal incorrect assumptions and possible rationales that the question writer never dreamed possible.

While pretesting the questionnaire, a high proportion of respondents giving no response or a "Don't know" response should raise danger flags. However, especially for a multiple choice question, a low number of "don't know" responses does not guarantee that the question is good. By recourse to the methods mentioned in the preceding paragraph, the pretester can come closer to guaranteeing that the questions are good.

Pretesting may seem a waste of time, especially when the author may have asked several people in his own office to critique the questions, or perhaps even has asked a questionnaire specialist to critique it. However, it will usually be an investment that is well worthwhile. It is crucial if the decision that will result from the information is important.

## CHAPTER 4

### A Check List

In the preceding chapters, we have talked first about the kind of information you need to establish as a foundation before you start writing questions, about the types of questions among which you may choose, and about the kinds of problems you may confront as you develop the questions for your questionnaire. The following check list may be of use to you both as a review and as a way of refreshing your memory as you actually work through the steps of developing a questionnaire instrument.

#### A. The Foundation.

1. Learn who needs the information.
2. Learn in specific terms what decision is going to be made based on your information.
3. Outline the facts that will be needed to make those decisions.
4. Identify respondents who have the information you need.
5. Use a procedure that will provide information of sufficient reliability.

#### B. The Question Type.

1. Open-ended questions.
  - a. Be sure, before asking an open-ended question, that it cannot be replaced with a multiple choice question. (Sometimes it cannot.)
  - b. Before using an open-ended question, be certain that you will have enough time to conduct an analysis of the data.
  - c. Make a particularly strong effort to avoid open-ended questions when the respondent does not have education beyond the eighth-grade level. (Some would have said high school level.)
2. Two-way questions.
  - a. Be certain that two alternatives are enough.
  - b. Try to use two forms of the question, in two different questionnaires, with the order of appearance of the alternatives reversed from one to the other.

- c. Be certain that the alternatives do not overlap.
- d. Be certain you will know what "was really meant" by each answer.

### 3. Multiple-choice questions.

- a. Check to be certain that you have thought of all reasonable alternatives. (Cross check this during pretesting.)
- b. If you are asking people to choose from a list of numbers, be certain that "response set" tendencies to choose from the middle of the list will not bias responses to your question.
- c. Similarly, if you have alternatives that are lengthy, make sure the tendency to choose from the beginning or end of the list does not bias your answers.
- d. Be certain the item does not include an alternative that will "wash out" the other alternatives.

## C. Writing Questions.

### 1. Initial development.

- a. Don't use terms or ask questions about topics that your respondent will not know about.
- b. Make sure that any answer the respondent makes will have a clear meaning to you.
- c. Don't ask people to make undesirable choices.
- d. Don't lead your respondents by wording the item so they will know what you want.
- e. Make the item and the choices short, and use simple words.
- f. Make certain the item clearly specifies what you want the respondent to do.
- g. Don't ask him to do several things in one item.
- h. Don't ask for several kinds of information in one item.
- i. Don't use tricky wording, especially double negatives.
- j. Don't ask for fine distinctions, unless you know they will be meaningful to your respondents.

- k. Don't word your question in such a way that the balance of responses will unavoidably be in one direction (loading).
  - l. Be sure your answers are worded so that someone who disagrees with you can find an answer presenting his side of the issue.
  - m. Screen your items for "All American" words or dead giveaway words.
2. Pretesting.
- a. For pretesting, use subjects representative of your eventual target.
  - b. Ask your respondent to provide both an answer and his reason for the answer.
  - c. Ask if there are other answers he could have given.
3. One last look.
- a. Re-read each question, and apply the "so what" criterion. (Will this information really make a difference to the decision maker?)
  - b. Re-examine each of the elements of information originally identified as necessary, and be sure that there is at least one question on each, and that the responses will provide a clear basis for that part of the decision.
  - c. Read the questionnaire as a whole to check that:
    - (1) The flow of items as a whole will not confuse the respondent.
    - (2) The flow of items as a whole will not tip him off as to what answer you think is correct.

Using this check list, and the thoughts contained in the preceding chapters, will not guarantee a successful questionnaire or a successful test. However, it is hoped that they will make the job a little faster, or a little easier, and a little better.